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DRIED EMULSIONS

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ABSTRACT OF THE DISCLOSURE

An edible composition comprising fat, emulsifier, water-soluble caseinate, whey, and a buffer is provided. The composition may be prepared by drying an aqueous emulsion containing the ingredients, and there may also be included gums, thickeners, flavors, etc. The dried products are especially adapted for reconstitution with aqueous liquids such as water and/or milk and/or cream to furnish a baking ingredient, garnish, topping and dressing, especially of the sour cream type.

BRIEF SUMMARY OF THE INVENTION

This invention relates to an edible composition and a method of making the same. More particularly, it relates to a composition suitable for use in the preparation of baking ingredients, garnishes, toppings, dressings, and the like, and a method of making the same.

Compositions containing fat particles dispersed in, admixed with, or coated with edible water-soluble solids such as proteinaceous materials, carbohydrates, gums, thickeners and flavors are well known. In recent years, many of such compositions have found wide acceptance in various convenience food products such as cake mixes, topping mixes, sauce mixes, and the like. These compositions usually contain carbohydrates such as sucrose, lactose, corn syrup solids, milk solids dextrin, sweet whey, and like materials which are especially useful in the preparation of such compositions because the materials serve as fat-encapsulating agents. More importantly, the materials are used since sweet-tasting products are generally desired. To the present, however, compositions of this type in which a sweet taste is minimized and which are especially suitable, upon reconstitution, for the preparation of baking ingredients, garnishes, toppings, dressings, and the like, have not been widely available. Where they have been available, they have been noted to possess many disadvantages including poor performance, non-uniform taste characteristics and unsatisfactory keeping qualities.

Although sour cream mixes are available, most of such products are obtained by drying natural cultured cream, cultured market cream, cultured sour cream, and salad cream. Because of the drying step, certain of these products are characterized by difficulties in reconstitution and by certain off-flavors which develop during the processing. Because sour cream provides a flavorful base for various garnishes, toppings, dressings, as well as sauces and spreads for salads, vegetables, meats, pastries, baked goods, and the like, it has long been used in the culinary arts in the preparation of many dishes and traditional foods. The pleasant, mild acid flavor and smooth, firm body of fresh sour cream are desired by many consumers but even when refrigerated, sour cream has a shelf life of about 14 to 21 days after which the product rapidly deteriorates. Separation of the whey from the curd usually takes place and the delicate flavor is adversely affected.

It is an object of this invention to provide a composition having extended shelf life which may be reconstituted with aqueous liquids such as water and/or milk and/or cream to obtain a product closely resembling fresh sour cream and suitable for use as a baking ingredient, garnish, topping, dressing, or the like.

In accordance with the present invention, it has now been discovered that a composition comprising fat, an emulsifier, a water-soluble caseinate and whey may be readily prepared by employing a suitable buffer. It appears that the buffer unexpectedly aids the reconstitution of the ingredients when they are combined with water and/or milk and/or cream. Moreover, it has been surprisingly found that curdling of the fatty emulsion prior to its being dried as, for example, by spray-drying or other drying methods can be minimized or eleminated with the result that an improved product is obtained.

DETAILED DESCRIPTION

While fatty emulsions containing fat, emulsifier, proteinaceous and carbohydrate materials have been prepared, see, for example, U.S. Pat. No. 2,913,342, the proteinaceous and carbohydrate materials usually include ingredients that are characterized by their sweetness such as sweet whey solids, sucrose, dextrose, lactose, corn syrup solids, milk solids, dextrin, and the like. However, where fatty emulsion products having a mild acid taste, such as a sour cream type baking ingredient, garnish, topping, dressing, or the like, are desired, such ingredients cannot ordinarily be used because of their undesirable sweet taste or poor performance of the products upon reconstitution. Thus, for example, when a fatty emulsion is proposed to be formed containing fat, emulsifier, a water-soluble caseinate, such as sodium caseinate, and acid whey, it has been observed that the acid whey tends to curdle the casein thereby causing processing difficulties and poor encapsulation of the fat.

While we do not wish to be bound by any particular theory regarding our invention, it appears that the isoelectric points of the casein, lactalbumin, lactglobulin and other milk-derived products which may be present markedly influence emulsion stability. However, by the use of a suitable buffer, the pH of the fatty emulsion may be maintained at a level of approximately about 4.6 to 5.1 at which curdling of the emulsion and precipitation or settling out of the casein and milk-derived products are avoided. Moreover, the employment of a buffer permits even sweet whey to be employed in the fatty emulsion providing that the desired acidity and tart taste are achieved by having lactic acid present. Thus, a combination of sweet whey and acid whey may be ingredients of the fatty emulsion, it appearing that the amount of lactic acid in the whey utilized is a controlling factor. However, although lactic acid may be added to the whey ingredient so as to obtain a standardized product for processing purposes, acid whey is usually employed.

The buffer may be any one or a mixture of a large number of soluble, edible compounds which are effective over the pH range of about 4.6 to 5.1 during the preparation of the composition in emulsion form as well as its later reconstitution from the dried state. Illustrative of the buffers which may be used are alkali metal and ammonium salts of hydroxy carboxylic acids such as citric, lactic, tartaric, adipic and malic and phosphoric acids of varying complexity. Of these, the sodium salts are especially desirable and sodium citrate is particulary preferred.

The fat may be any one of those normally employed in food products adapted to be used as toppings and the like. For example, lard, modified lard, cottonseed, coconut, peanut and corn oils which may be fully or partially hydrogenated, may be employed. The fat or fats may be any combination of semi-solid or solid fats and may have the melting point range, saponification value, iodine number and other characteristics found to be desirable in the preparation of topping compositions. The fat will ordinar-